

BRITISH AFFAIRS

A QUARTERLY REVIEW

THE EUROPEAN FREE TRADE ASSOCIATION

Notes from Britain on:

The Arts—Scientific Development—

Trade Unions—Education and Youth Welfare

THE COMMONWEALTH

STERLING

OVERSEAS DEVELOPMENT

VOL. III, NO. 4—DECEMBER 1959

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British Affairs

The last three months of 1959 were as eventful as the rest of this eventful year. In British affairs there was the General Election. In a fairly heavy poll the Conservative Party was returned with a parliamentary majority of 100 seats. The Conservatives won 365 seats; Labour 258 seats and the Liberals 6. There was one "Independent."

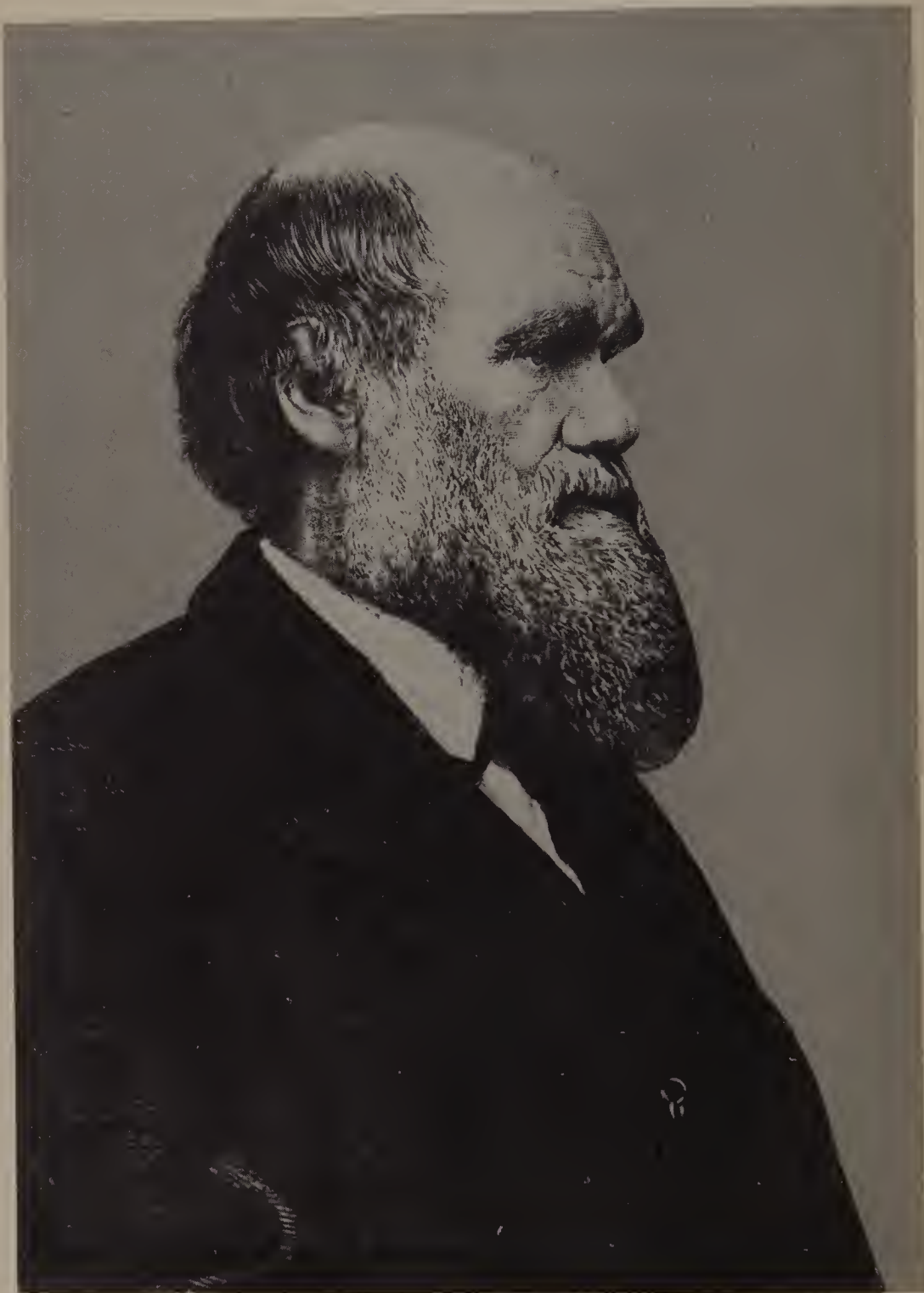
At the time of going to press, a convention was initialled in Sweden establishing the European Free Trade Association. The essential points of the Stockholm Decisions of November 20th are recorded in this issue.

The virtual ending of the system of import controls which have curbed British imports in varying degrees since 1939, the new freedom to spend abroad for travel and the repayment of dollar debts were other major developments this quarter. These responses to Britain's newly attained balance in its foreign accounts are also described in this issue.

ALSO IN THIS ISSUE—

Short articles which serve as pointers to thinking in Britain on the arts, science, education and labour problems are followed by rather heavier matter on the Commonwealth, Commonwealth development and on sterling. These articles update the treatment of these subjects given in the June and September 1958 issues of British Affairs.

The note on the Charles Darwin centenary was contributed by Dr. Gertrude Himmelfarb, the author of this year's major work on Darwin: "Darwin and the Darwinian Revolution."



Charles Robert Darwin
1809-1882

Charles Robert Darwin
1809-1882

The Darwin celebrations this year commemorate both the 150th anniversary of Charles Darwin's birth and the 100th anniversary of the publication of the Origin of Species.

Charles Darwin, grandson of Erasmus Darwin, the naturalist-versifier, and of Josiah Wedgwood, founder of the family pottery and fortune, was a diffident youth and an indifferent student, who seemed to care for little else, his father complained, than "shooting, dogs and rat-catching." The turning point of his life, his second birthday as he later put it, was his appointment as naturalist to H.M.S. Beagle. The five year voyage around the world provided him with the qualifications for a career and the materials for his great work. His Journal of the Voyage of the Beagle established him in the scientific community and gave him a hearing among laymen, both of which stood him well when, two decades later, on the 24 November 1859, there appeared his epochal work, On the Origin of Species.

The evolutionary theory was not new, but Darwin's particular version of it—the theory of natural selection, was essentially new. There was much matter for controversy in it, but also much that was persuasive and congenial, and controversy soon gave way to conversion. By 1871, when Darwin's Descent of Man spelled out the implications of his theory for the origin of the human species, most scientists and thoughtful laymen were, if not entirely convinced, at least receptive and sympathetic.

Having established itself as a scientific theory, Darwinism soon made its influence felt upon religious and social doctrines, with varying and often contradictory effects. Thus some took it to mean the triumph of atheism or nihilism, while others saw in it the working of divine providence. Similarly, natural selection was used to justify laissez-fairism on the one hand, and dictatorship, militarism and imperialism on the other.

However Darwinism may have been exploited for social purposes, or whatever inadequacies may be found in it as a scientific theory, it remains one of the great landmarks of our time.

The European Free Trade Association

Seven countries* initialled a convention establishing the EFTA on November 20, 1959.

They undertake to abolish tariffs between them on industrial goods and to introduce special arrangements to increase trade in agriculture and fish products.

They will cut tariffs by 20% on July 1, 1960 and by 10% each year thereafter until 1970.

Unlike the other European group, the six country Economic Community, they will not establish a common tariff wall: the communique issued on November 20 said:

"The Association is a further expression of the post-war drive to lower trade barriers, and reflects the principles which have been established by the General Agreement on Tariffs and Trade (GATT). The individual freedom of action of EFTA countries in their external tariffs will allow each of them to participate actively in GATT negotiations for tariff reductions.

Most important, the EFTA look toward the elimination of discrimination between the whole community of Western Europe joined together in OEEC. The Seven endorsed a resolution on this question the full text of which is given on the opposite page.

FACTS ABOUT THE EFTA

A Promising Market—

- *Population 90 million (a little over half EEC).*
- *But production is two thirds that of EEC.*
- *And combined national income is two thirds of EEC's.*
- *The seven import a third as much again as does the U.S.A.*
- *And imports constitute 25% of their national income.*
- *The Seven countries send 18% of their exports to each other and get 16% of their imports in return.*
- *A quarter of their trade in both directions is with the six EEC countries.*
- *Three fifths of the Seven countries' trade is outside Europe altogether.*

*Austria, Britain, Denmark, Norway, Portugal, Sweden, Switzerland.

Text of A Special Resolution of the Seven EFTA Countries, November 20, 1959

For more than 10 years, the Seven countries which are now establishing the European Free Trade Association, have cooperated most successfully within the framework of the OEEC, both with the Six countries which are members of the European Economic Community, and with Greece, Ireland, Iceland, Turkey, and recently Spain. Indeed, the remarkable expansion of the European economy since the end of the War is due, to a large extent, to the work of the OEEC. Its achievements have had beneficial effects far beyond Europe.

By preparing the convertibility of currencies, the OEEC has created the conditions permitting its members to eliminate the restrictions on trade progressively also toward third countries.

By promoting freer trade in Europe, the OEEC plays therefore an important role in the liberalization of trade on a world-wide basis.

The existence of two groups, the EFTA and the EEC, inspired by different but not incompatible principles, implies the risk that further progress along these lines be hampered, if such a danger could not be avoided by an agreement to which all countries interested in European economic cooperation could subscribe.

Such an agreement, based on the principle of reciprocity, should not cause any damage to the measures taken by the European Free Trade Association and the European Economic Community.

Moreover, it should allow member states of either organization to eliminate in common the obstacles to trade between them, and more generally, to seek to solve the problems they share.

Among those, there is the problem of aiding the less developed countries in Europe and in other continents, which is one of the foremost tasks of the more advanced countries.

Common action in these fields would strengthen the already existing bonds between the European countries as well as the solidarity arising from their common destiny, even if their views on the way in which European integration should be achieved are not always identical.

For these reasons, the Seven Governments who will sign the Convention establishing the European Free Trade Association, declare their determination to do all in their power to avoid a new division in Europe. They regard their Association as a step toward an agreement between all member countries of OEEC.

To this end, the Seven Governments are ready to initiate negotiations with the members of the EEC as soon as they are prepared to do so. Meanwhile, views should be exchanged through diplomatic channels or in any other way, on the basis upon which such negotiations may profitably be opened.

Annus Mirabilis

Economic Recovery—And Britain's Response

This is a time when the erstwhile stricken countries of Western Europe are called upon to carry their share of the load in maintaining the free economic system and in helping their weaker sister nations. This is as it should be and they are responding. Protective trade barriers are coming down everywhere; foreign aid contributions whether given directly or through international agencies, are expanding. Debt payments are being accelerated.

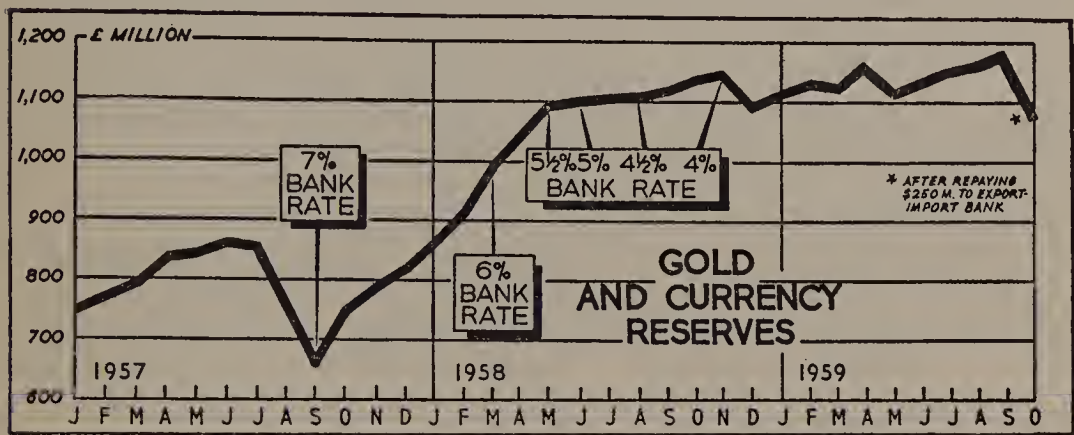
The free world finds itself for the first time since the war on the verge of fulfilling the promise of free and friendly competition in trade and mutual assistance in developing world resources given at the Bretton Woods Conferences in 1944. This Conference set up the International Monetary Fund and the World Bank for Reconstruction and Development. Both were planned to operate fully only in a world of multilateral free trade and payments. Very shortly after that the GATT (General Agreement on Tariffs and Trade) was drawn up and an International Trade Organization planned although it has never materialized.

THE TRANSITION PERIOD

In the years that have intervened nearly all countries invoked escape clauses, relieving them of the full extent of their responsibilities under these schemes for international interdependence; nearly all of them were driven to count themselves out because they did not have sufficient foreign income, whether from trade or investment, to cover their current needs for food and raw materials let alone to buy all the good things that richer nations would like to have sold to them. If we picture the deficit nations as heads of families down on their luck we might add that neither had they much over, after feeding their own families, to contribute to the various charities to which they were invited to subscribe (although, be it noted, Britain has maintained a flow of loans and gifts to capital-short countries throughout the post war years). As indigent but prudent housekeepers they limited their expenditure to what was essential—by import controls and by limiting family consumption (by rationing both goods and money) and while they did this they strove might and main to build up their earning power by rebuilding the family plant (by the investment of savings—voluntary or tax-secured—in essential enterprises to the neglect of the less essential). They gratefully accepted gifts and accommodation from kind friends but insisted on expending them on only the cheapest, most

serviceable and most necessary goods even when the richest and finest food, clothing and equipment was proffered.

This picture of unrelieved virtue—of a latter-day Swiss Family Robinson—is false if it is represented as the whole story of the post-war struggle of the “deficit” countries to restore themselves. There was much back-sliding, much experimenting with solutions which proved unworkable; but in terms of broad economic history, austerity paved the way to freedom.



THE ROAD TO FREEDOM

That this is so may be judged by what such countries have achieved in the past year or so. The improvement has been general among manufacturing countries. For Britain the results may be thus summarized.

1. For the last 18 months Britain has for the first time secured a trade surplus with the rest of the world. This is something she never enjoyed in the 100 years or so before the war when she was the leading creditor country. In that period she readily imported more than she exported, and relied on her own business earnings, from investment, banking, shipping or insurance to more than offset the trade deficit, and to earn a surplus.

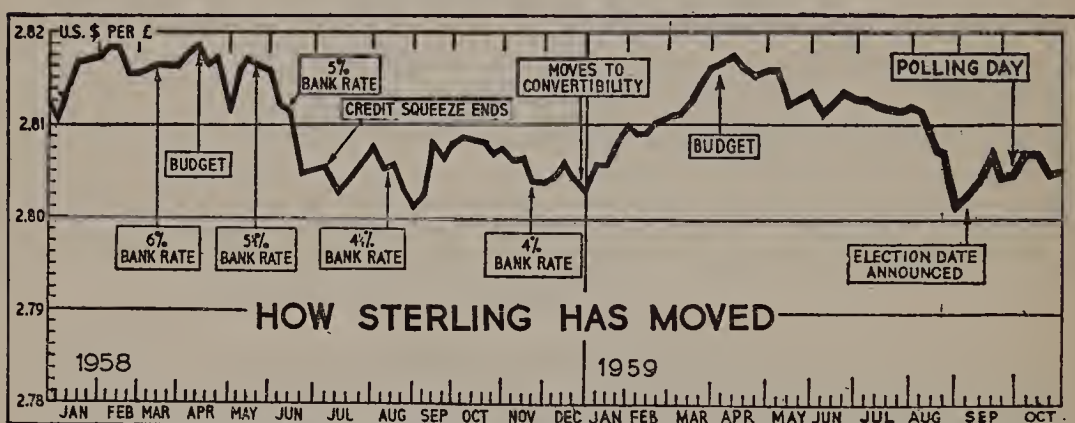
2. Although her liabilities still stand at 3½ times her reserves, she has built up a working gold and hard currency reserve sufficient, with good management, to permit (a) new freedom for foreign expenditure (b) the accelerated paying off of debt (c) the increase in foreign lending and gifts abroad. The record under these three headings is examined below.

3. Over the years, by rigorous pruning of domestic expenditure, limitation of credit and therewith all sorts of desirable expansion projects (roads, commercial building, personal homebuilding and furnishing), she had by the middle of 1958, secured a balance in the economy and stable prices. Price stability was helped by the relatively low level of import prices in the past few years. It is admitted that the whole operation resulted in a

postponement of the growth of what should be an expanding economy; but with the new stability it seemed by 1958 that most of the special measures of austerity could at last be ended.

1958 saw the end of the credit squeeze (limiting bank credit), the end of control over installment buying, many import controls abolished, the ending of many restrictions on foreign investment and important tax reliefs.

1959 saw the end of controls over capital raising for industry; further tax reliefs and, most important, the ending of most if not all exchange controls. This followed the major move to make sterling convertible once more: On December 29, 1958 all sterling held by non-residents became officially convertible into gold or other foreign currencies.



THE RESPONSE TO FREEDOM

The British economy has responded to its new freedom with a spurt in production and in productivity. Not only domestic production but exports have gone up. There is a new confidence that the country can *afford* to expand without running into consequential balance of payments troubles abroad or inflation at home.

This is good for Britain's partners. Faster debt payment, more overseas aid and freer trade have followed promptly.

Debt Repayment

On March 19, 1959, Britain paid \$200 million to the International Monetary Fund. This was repayment of part of the \$561 million drawing on the IMF made by Britain in December 1956. Repayment of the balance is to be made in monthly instalments during 1960-61.

On October 29, 1959 Britain repaid in full to the US Export-Import Bank the \$250 million credit drawn in October 1957 plus \$5½ million interest on it. This was part of a \$500 million credit also extended to

(Graphs from the *Financial Times*)

Britain in December 1956 when the pound was in acute danger. In February 1959 Britain was able to announce that she would not draw the balance of the credit. Repayment of the \$250 million actually drawn was scheduled in half yearly instalments between October 1960 and April 1964, with interest at $4\frac{1}{2}\%$.

Adding in the \$155 million annual debt payment to America due in December Britain will have paid off over \$600 million of debt in 1959. As a result her total reserves stand at a little over \$3 billion. Liabilities (foreigners' claims on sterling) stand at \$11.4 billion.

Expanded International Cooperation and Aid

In 1959 Britain was the first country to ratify the agreement to double the resources of the IMF. The increased British subscription of £232 million (\$650 million) was paid up in May 1959. A corresponding increase in subscriptions to the World Bank is also expected. In addition, the British announced the immediate release to the Bank of the balance of its existing subscription which formerly was to be withheld for lending purposes until the early sixties.

Britain's annual pledge of aid to the United Nations technical assistance and training programs has been raised this year from \$3 million to \$8 million (which is a sum greater than the United Nations assessment of what the British subscription should be, measured on a national income basis).

British Government loans and grants of all sorts (excluding military, emergency and technical aid) rose from \$200 million a year in 1957/1958 to \$280 million a year in 1958/1959, an increase of over a third.

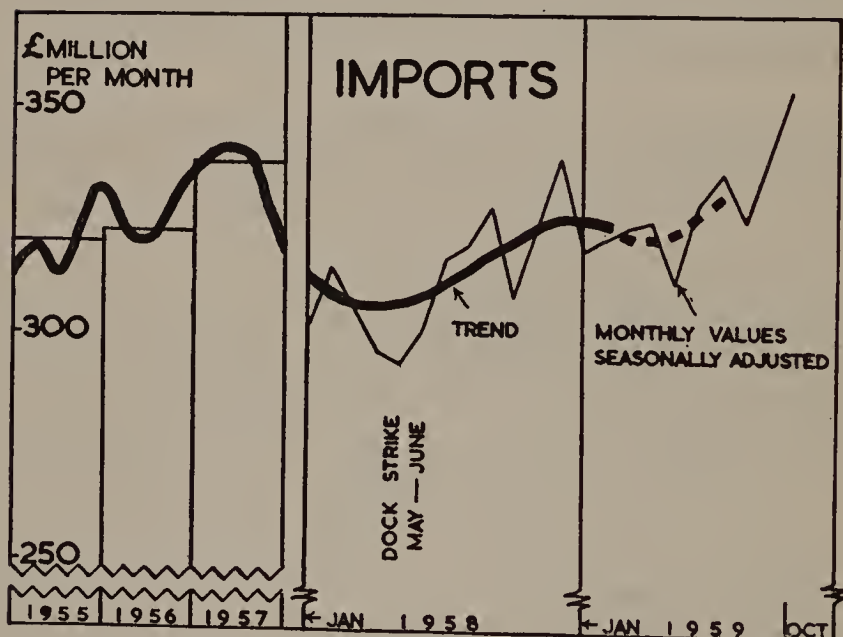
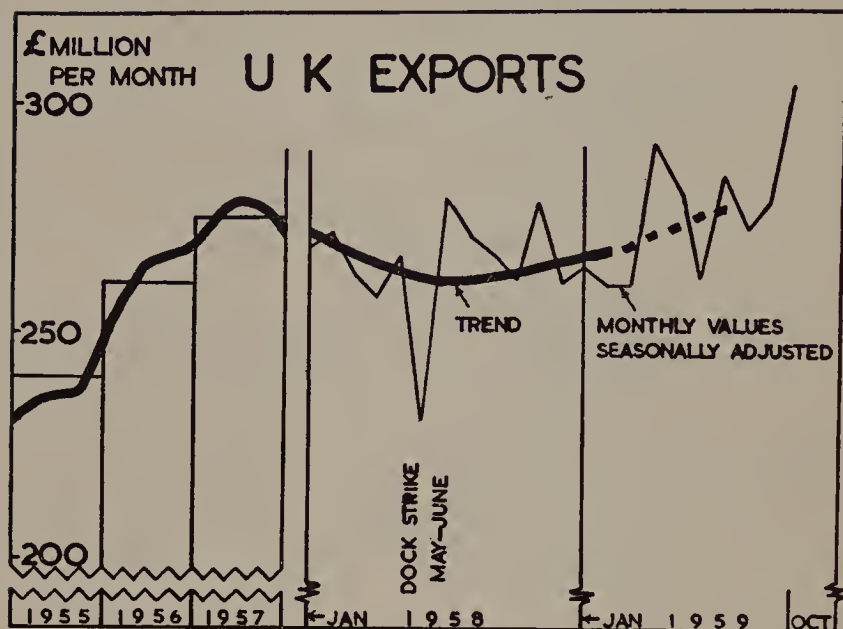
Ending of Trade Restrictions

On November 9, 1959 nearly all import licensing restrictions on goods from all countries except the Soviet bloc, China and Japan (the latter is subject to special arrangements) were abolished, only 25 or so items now remain subject to licensing. Except for the case of a few of these items this means the end of discriminatory licensing (i.e., favoring one currency area against another) as well as bringing to a close a system which, with variations, controlled Britain's trade since 1939—twenty years ago. This was the third major decontrol measure in a little over a year. The previous ones were made effective in the autumn of 1958 and in June 1959.

If it is reflected that it is only in the past year or so that Britain could point to a restored health in her economy—internal and external, and that it is only two years since the dark months of 1957 when imminent devaluation of the £ was a possibility freely discussed in world markets, the record of prompt response to improved conditions is not a bad one.

UNITED KINGDOM TRADE

Seasonally Adjusted



NOTE: THE LEVEL OF THE TREND LINE FOR EACH MONTH TAKES INTO ACCOUNT FIGURES FOR THE SEVEN MONTHS BEFORE AND AFTER THAT MONTH. A PROVISIONAL TREND FOR THE FIRST FOUR OF THE LAST SEVEN MONTHS IS SHOWN BY THE BROKEN LINE

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The Secretary-General of the Arts Council of Great Britain describes the new interest in the arts in Britain—performing and otherwise. Few of the great individual patrons remain, but “public patronage” is now accepted.

Public Money for the Arts

Sir William Emrys Williams

Secretary-General of the Arts Council of Great Britain.

During the last 20 or 25 years the fine arts have taken a new lease of life in Britain, not only in terms of quality and performance but also in the extent to which they have secured the support of large popular audiences.

For example, ballet is not traditionally a British art, and it is less than 30 years since Dame Ninette da Valois opened a school to train girls and boys for this exacting art. Her genius and determination have produced within a generation the celebrated Royal Ballet, which now has world-wide recognition as the equal of that other famous company, the Russian Bolshoi Ballet, over two centuries old.

In opera, too, a new epoch has developed, within a decade, at the Royal Opera House in Covent Garden, London. Formerly this large and beautiful theatre had no native company of singers and musicians, but received, from time to time, gala visits from the long-established opera houses of Europe. Since the end of World War II, a resident company has been created and, although singers and conductors from other countries are as welcome as ever, Britain now has two flourishing metropolitan opera companies of its own, at Covent Garden and Sadler's Wells, which play to consistently full houses in London and provide at least 30 weeks a year of touring among the large provincial towns.

Music. Britain now possesses eight permanent symphony orchestras (excluding several other British Broadcasting Corporation radio orchestras) as compared with three some 25 years ago. What is no less significant is that five of these are based outside London, at Manchester, Liverpool, Birmingham and Bournemouth in England and at Glasgow, in Scotland. They have built up powerful local audiences and from those centres they provide local tours which cover practically every sizeable town in their territories.

It has been widely prophesied that the spread of television would injure some of the arts, notably drama. That prediction has not yet been fulfilled. Britain's two national theatres, the Old Vic and Stratford, are at

least holding their own, and have achieved also an international reputation which makes them welcome visitors to the United States, the Soviet Union, the Commonwealth and many European countries.

In the provinces there are some 50 repertory theatres open and, despite the demands of the gigantic program of building new homes, schools and roads in which Britain has been engaged in recent years, two new theatres have already been built—at Coventry and Newcastle—and several others are about to be started in such thriving cities as Nottingham.

Other signs of the contemporary renaissance are equally evident, such as the remarkable popularity of the visual arts. Since 1946, the Arts Council of Great Britain has mounted dozens of international exhibitions of painting and sculpture—from France, Germany, Italy, Spain, Mexico, Holland, China and Japan—and these have attracted millions of visitors in London and the provinces.

Britain lags perhaps in contemporary painting, but has produced what is recognized as the leading assemblage of contemporary sculptors, led by Henry Moore, Jacob Epstein, Lynn Chadwick, Reg Butler and Frank Dobson, whose reputation is as high in New York or at the Venice Biennale as it is among their own countrymen.

This immense growth in the provision and appreciation of the arts is attributable to several causes, among which are, evidently, the enlargement of leisure as working hours decrease and the continuously rising standards of education. Other factors are the educative influence on public taste of sound radio and long-playing records; for the B.B.C., particularly, has achieved a major influence in its admirable provision of serious music on the air.

GOVERNMENT AID TO THE ARTS

But one other factor of deep significance is that the Government has at last accepted a measure of responsibility for music, drama, opera and ballet. The audiences which make up the bulk of attendance at public performances today are immeasurably larger than the middle-class patronage of 30 or 40 years ago—but they are also less able to afford to pay an economic price for these aesthetic experiences. If the many, therefore, are to enjoy the arts, some element of subsidy must be provided.

Immediately after the war this democratic principle of patronage was recognized by the United Kingdom Government, which set up a body called the Arts Council, whose duty was to administer whatever money Parliament might vote for the nourishment of the arts. Since that time the Arts Council, which is wholly free from State control of any kind, has been provided with funds to divide, as it deems best, among the orchestras, repertory theatres and opera houses of the country, and with

funds, also, to provide the large network of art exhibitions already mentioned.

A further measure of public responsibility for the arts was recognized in 1948 when municipalities were authorized by Act of Parliament to allocate subsidies for music and drama. During the few years since that milestone of patronage was reached many provincial towns have used these new powers to subsidize a local repertory theatre or orchestra.

PUBLIC PATRONAGE—A NEW IDEA

These conceptions of public patronage are relatively new to Britain, and the brunt of what the arts cost to provide is still borne by the audiences who attend them: there is evidently much to be said for requiring audiences to pay as substantial a share as they can manage for the aesthetic pleasure they enjoy. "Bread and Circuses" would be an undignified slogan for any self-respecting democracy to adopt.

At present the total amount of public funds, from the Government and from municipal authorities, which is being distributed among the bodies providing the arts is little over £1,000,000 a year, and of this four-fifths comes from the Government. By the standards of many European countries this is a modest subvention, for Britain is traditionally conservative in adopting experimental policies. However, the principle of public patronage has been definitely accepted by all the political parties, and happily the total funds now granted for this purpose are already four times what they were ten years ago.

What is even more encouraging is that no elaborate and expensive bureaucratic machinery has been required to administer these subsidies for the arts. Instead of providing itself with the costly luxury of a Commissioner, or a Ministry of Fine Arts, Britain has adhered to the principle that every theatre and orchestra and opera house should be self-governing, and that the proper role of governments is to encourage.

INDUSTRIAL PARTICIPATION

A third source of patronage is developing in Britain. Many large firms are taking the view that a good business, like a good citizen, should assist good causes. Among such good causes, they believe, is the welfare of a theatre or orchestra which may exist in the local town where their employees work and cultivate their leisure. Many industrial firms — household names — help sponsor the Glyndebourne programs for example. Industry and commerce in this sense are joining forces with the Government and the municipalities in ensuring that the new millions who have discovered the arts shall enjoy them at reasonable prices.

The British Society, Britain's oldest learned society, was founded in 1660. The notable achievements of British scientists through the years is testimony to the Society's past success in the promotion of "natural" knowledge. The tercentenary offers an opportunity to take stock, to assess the challenge of a new technological era.

Notes on Science—Pure and Applied

by

Sir Edward Appleton

Vice Chancellor of Edinburgh University.

The recently completed International Geophysical Year 1957/8 has provided a clear illustration to the world of the way science is an international activity. For, during that intensive period of scientific observation, the world has ignored political boundaries in studying itself. To the scientist, then, there is no such thing as national science. But there is, by contrast, such a thing as a national *attitude* toward science. And, undoubtedly, the British attitude toward science has affected the way we in the United Kingdom have worked at it in the past, and so has influenced our particular achievements in it.

SCIENCE OF NATURAL THINGS

We always picture the age of modern science in Britain as beginning with the foundation of our Royal Society, which next year, 1960, will celebrate its tercentenary. The objectives of the Society were stated in its Charter as being twofold: the promotion of "the science of natural things and of the useful arts."

In modern phraseology we would say that this meant both pure science and applied science; though in fact, as the published records of the Society clearly show, the first interest of the Fellows of the Royal Society has always been "the science of natural things"—or science for its own sake.

INDIVIDUAL APPROACH THE KEY TO PURE RESEARCH

They have not given anything like the same attention to the application of science—the applications of science to the arts of life. We must remember here that the conversion of Britain to a manufacturing nation—the Industrial Revolution as it is termed—owed less to science than to a

SCIENCE PURE AND APPLIED: some British "firsts"

<i>Permanent dry dock</i>	<i>Portsmouth, 1496</i>
<i>Navigator's sextant</i>	<i>Robert Hooke (1635-1703)</i>
<i>Marine Chronometer</i>	<i>John Harrison (1693-1776)</i>
<i>Discovery of blood circulation</i>	<i>Dr. William Harvey (1578-1657)</i>
<i>First practical steam engine</i>	<i>Thomas Savery, 1698</i>
<i>Steam pumping engine</i>	<i>Newcomen, 1708</i>
<i>Piston-rotated steam engine</i>	<i>James Watt, 1769</i>
<i>Power loom</i>	<i>Edmund Cartwright (1743-1823)</i>
<i>Threshing machine</i>	<i>A. Meikle, 1786</i>
<i>Electric dynamo</i>	<i>Michael Faraday (1791-1867)</i>
<i>First hydraulic press</i>	<i>Joseph Bramah, 1796</i>
<i>Bessemer steel process</i>	<i>Sir Henry Bessemer (1813-1898)</i>
<i>Propeller-driven steamship</i>	<i>I. K. Brunel, 1838</i>
<i>Vaccination</i>	<i>Sir William Jenner (1815-1898)</i>
<i>Portland cement</i>	<i>John Aspdin, 1824</i>
<i>Antiseptics</i>	<i>Joseph Lister (1827-1912)</i>
<i>Microphone</i>	<i>David Hughes (1831-1900)</i>
<i>Public telegraph transmission</i>	<i>Charles Wheaton and W. F. Cooke, 1837</i>
<i>Aniline dye</i>	<i>Sir William Henry Perkin (1838-1907)</i>
<i>Pneumatic tire</i>	<i>R. W. Thomson, 1845</i>
<i>Reinforced concrete</i>	<i>W. B. Wilkinson, 1854</i>
<i>Underground railways</i>	<i>(Steam) 1863, (Electric) 1890</i>
<i>Trouser turn-ups</i>	<i>Lord Craven, 1880</i>
<i>Steam turbine power plant</i>	<i>Charles Parsons, 1884</i>
<i>Stainless steel</i>	<i>H. Brearley, 1916</i>
<i>Atomic Nucleus identified</i>	<i>Lord Rutherford, 1911</i>
<i>Television</i>	<i>J. L. Baird, 1925</i>
<i>Controlled splitting of Atom</i>	<i>Cockcroft and Walton, 1932</i>
<i>Sulphapyridine (first sulfa drug)</i>	<i>May and Baker, 1937</i>
<i>Terylene (dacron)</i>	<i>Winfield and Dixon, 1941</i>
<i>Penicillin</i>	<i>Sir Alexander Fleming (1881-1955)</i>
<i>Jet engine</i>	<i>Sir Frank Whittle, 1937</i>

number of outstanding inventions made by men actually working in various industries.

Scientific research which had begun in Britain as an amateur activity, remained predominantly the activity of individuals. Only recently—within, say the last 50 years—have we started to organize professional teams of scientists to work on problems of industrial and military importance. Our early achievements have therefore been largely in the field of pure science, where the freedom of the individual to choose a problem that interests him is so vitally important. It is this individual approach to science that has enabled us to isolate and study distinct problems.

In the same connection I think it is fair to say that we have displayed a happy knack of being the first to get to the bottom of many of them. Take, for example, two modern developments in industry today—the subjects of electronics and nuclear energy. The first word on both subjects was said by two scientists working in Britain, both University Professors who were simply working at problems in pure science which interested them. Sir J. J. Thomson discovered the electron at Cambridge, while Lord Rutherford discovered the atomic nucleus at Manchester.

One can mention other British names—for example, in the biological sciences—names of men who, working as individuals, have made basic discoveries which have proved the starting points of great advances in their respective fields. I need only mention here such names as William Harvey, who discovered the circulation of the blood; Charles Darwin and his theory of evolution; and Sir Gowland Hopkins, the discoverer of vitamins.

ADVENTURE IN THE MIND

You will see, then, that the start of any new development in science is usually the work of a single person. An adventure takes place in one man's mind, as a result of which either a scientific theory emerges or a new experimental discovery is made. It is knowing how or where to start that matters. If the start has opened up a fruitful field—fruitful in practical consequences, that is—we usually want a team of applied scientists to follow it up and reap all its benefits.

Take a more modern instance than those I have mentioned, that of penicillin. It was discovered by Sir Alexander Fleming—one man. Its therapeutic properties were first fully demonstrated by Sir Howard Florey and Dr. Chain—two men. Nowadays there must be many thousands of people working in this important branch of medicine. And they are doing so all over the world. Truly, science has no frontiers.

FROM PURE SCIENCE TO APPLIED SCIENCE

Now, although I am claiming that British scientists have been responsible for many of the basic discoveries in natural science, it cannot be claimed that, in the past, Britain has been as alert as some other countries in following up the useful applications of those discoveries. Indeed there are notable instances where a British basic discovery has been chiefly developed elsewhere. The discovery of an aniline dye, by W. H. Perkins, in London, was, for example, the starting point of the growth of the great German dyestuffs industry in the days before World War I. There was no corresponding development in Britain. It seems, somehow, to have needed national emergencies really to awaken us to the economic and military importance of scientific applications.

It was our experience in the 1914-18 War, when we had to start manufacturing things we had previously imported from abroad, which led the British Government to found the Department of Scientific and Industrial Research, an organization which has not only done applied research itself, but has also fostered the growth of co-operative Research Associations in industry. This Department, together with corresponding organizations for agriculture and medicine, caters for research over a wide front in the civil field. Their importance is recognized by the fact that they are under a senior Minister of the Crown, the Lord President of the Council.

TEAM-WORK FOR APPLIED SCIENCE

However it was just before and during World War II that Britain most effectively demonstrated that we could do team work in applied science, as well as individual work in pure science, when the need arises. It was the threat of enemy bombing which prompted us to take the world lead in the development of radar; and it was a British invention, the cavity magnetron, which has transformed that subject in the realm of accurate navigation by sea and air. Further evidence of our ability to do team work in applied science is demonstrated by the co-operation of government and industrial scientists in harnessing nuclear power for the generation of electricity to serve our homes and industries.

So the situation is this:— in the past we have tended as a nation to concentrate on pure science, in which we have a proud record of achievement. But we have now shown our friends, as well as ourselves, that we can be as successful in harnessing nature as in understanding it. At the same time, ideas germinate in the minds of individual men, for whom the opportunities for pure research must be preserved, if mankind as a whole is to benefit. This we try to insure.

Promoting Industrial Inventiveness

National Research Development Corporation

Some important scientific advances announced in Britain recently, notably the Hovercraft and the Bacon fuel cell which are being developed under the sponsorship of the National Research Development Corporation have drawn attention to the Corporation's work in the promotion of inventions.

RESEARCH IN THE PUBLIC INTEREST

Set up in 1949 under the Development of Inventions Act, 1948, the NRDC was one of the first such organizations to be established in any country, although similar ones now exist in Canada, India and elsewhere. Its primary function is to develop and exploit, in the public interest, inventions arising from research carried out by Government departments and other public organizations. In certain circumstances it may also develop and exploit inventions developed privately.

The Corporation is an independent entity and its Board consists of a Chairman, a full-time managing director and ten members, two of whom are drawn from the executive staff. All are appointed by the President of the Board of Trade. The Chairman and eight other members hold important positions in science or commerce, and give the Corporation only part of their time. Its staff of more than 100 includes chemists, physicists, engineers and patent agents.

Until 1968, the Board of Trade, which is also charged under the 1948 Act with giving directions of a general character as to the exercise of functions of the NRDC, is empowered to advance up to £10,000,000 to it for carrying on its work. Ultimately, the Corporation is required to become self-supporting financially. At the end of the Corporation's 1957-58 financial year, advances from the Board of Trade, including interest payable, totalled £2,200,000. Revenue from the exploitation of inventions in that year amounted to £174,000.

INDUSTRY TAKES OVER

As soon as an invention is judged ripe for commercial exploitation, the NRDC seeks industrial firms willing to take a license under the patent. License terms are a matter of normal commercial negotiation, each case being governed by its own special circumstances. The Corporation requires a royalty, usually in the form of a percentage of the selling price of the goods or apparatus embodying the invention. A special case arises with inventions made by Government employees, for the Crown retains

SPONSORED RESEARCH

Among the important developments under the sponsorship of the National Research Development Corporation are:

The Hovercraft. This 4 ton, 34 foot oval-shaped machine which is neither ship nor plane nor automobile embodies revolutionary lifting principles and rides on a cushion of air. In July it skimmed across the Channel from Calais to Dover in 2 hours 3 minutes. Work began on it as a private venture in 1953. Since 1958 the N R D C has provided financial support.

The Bacon Fuel Cell. A hydrogen-oxygen fuel cell pioneered at Cambridge by Mr. F. T. Bacon has been under the sponsorship of the N R D C since 1957. It offers the possibility of an efficient source of electricity from chemical energy. The new power-pack has been demonstrated this fall. Energy was produced to lift substantial loads.

The Dracone Flexible Container. The feasibility of transporting oil and other liquids by towing a sausage-shaped container of flexible nylon "skin" has already been demonstrated. A 350 ton Dracone container is now being built capable of carrying 35,000 gallons.

Frozen Milk. A process of preserving milk by treatment with ultrasonic vibrations and then freezing it solid is being sponsored by the N R D C. The milk can then be kept fresh for at least a year; the invention opens up new possibilities in the marketing of milk.

the right to benefit by the inventions free of royalty after transfer of the patent rights to the Corporation. In exceptional cases, the Corporation may be prepared to consider the grant of a sole license.

The greater part of the inventions come from Government research establishments, and the remainder from such organizations as the Medical Research Council, the Agricultural Research Council, the universities and hospitals. The Corporation also seeks licenses for certain Canadian inventions under a reciprocal arrangement with Canadian Patents and Development Ltd., an agency of the Canadian National Research Council.

SOME IMPORTANT DEVELOPMENTS

The range of inventions in the portfolio of the Corporation is very wide, embracing mechanical and electrical engineering, electronics, scientific instruments, chemical technology and pharmaceuticals. Those currently bringing in revenue include the Bailey Bridge, a method of obtaining hecogenin (for making cortisone) from sisal, the Denny-Brown ship stabilizer control gear, and selective weed-killers. It holds over 200 patents and patent applications concerned with electronic computers.

Britain has its own, grave problems of "J.D." This article does not deal with the treatment of juvenile offenders; it describes some of the efforts being made to create a healthier outlook.

Youth Services in Great Britain

In spite of official recognition of the need for youth work as early as 1918, the provision of recreational and social activities for young people remained until the second world war largely in the hands of volunteers. Many of these voluntary efforts to provide facilities for youth were religious in origin and purpose, such as the Y.M.C.A., the Boys' Brigade and the Church Lads' Brigade. There were the Boy Scouts too, and the Girl Guides. This period also saw the beginning of boys' and girls' "clubs" which were founded by the Churches, public-spirited individuals and institutions for the purpose of offering healthy recreation to young people in the poorest areas of big cities. The disrupting influence of the 1939-1945 war on family and social life showed up the urgent need for extended youth services. In November 1939, a circular issued by the Board of Education (now the Ministry of Education) set in motion the almost revolutionary development in youth work that took place over the next few years. Further, the Education Act of 1944 recognized and emphasized the position of the youth services as an essential part of the educational system.

OFFICIAL HELP

Under the Act, each Local Education Authority (county or city), of which there are 146 in England and Wales, is required to deal with any shortage of facilities, such as youth clubs, training centers and sports equipment, in its own area. Each Local Education Authority has to work very closely with those services already provided by voluntary organizations. Any centrally controlled scheme, calling for uniformity or regimentation would have been both impractical and perilous.

Official help can and does take several forms. Financial aid is provided by both the government departments in London and by the Local Education Authorities: for the financial year 1958-59, direct grants made to voluntary organizations headquarters by the Ministry of Education for England and Wales were estimated at £219,000 (\$613,200). The Local Authorities offer direct assistance to local efforts, such as financial aid to individual youth groups, the loan of equipment and premises, and a training program in youth work.

YOUTH EMPLOYMENT SERVICE

A survey of the youth work of 67 of the 146 local authorities in 1955 showed that 47 found it necessary to supplement the work of local voluntary organizations by establishing their own youth clubs and centers. Many of them offer sports of all kinds, handicrafts and, as well, vocational training and guidance. Under this latter category, we must mention the establishment, through the Employment and Training Act of 1948, of Youth Employment offices. The Youth Employment Service was set up to assist young people in obtaining jobs suited to their capabilities and training. The Service, under each Local Education Authority, works in conjunction with the schools in the area, so that, although no compulsion is attached, each child leaving school is recommended to apply for an interview with the Youth Employment Officer. Advice may be offered or further interviews set up with prospective employers. Training grants may be offered to young people with special aptitudes who have no opportunity of suitable training near their homes. This service is unlike anything provided by voluntary organizations. In recent years, instead of regarding youth work merely as the provision of social recreation, the authorities have come to regard it as a positive means of social, physical, cultural and vocational education. All the 67 local education authorities covered in the 1955 survey make evening classes available to voluntary youth organizations; while the youth groups often meet after hours in modern school premises where they have the benefit of first-class handicraft rooms, proper stage equipment and ciné projectors, and can offer their members a varied educational program, as well as facilities for hobbies and for recreation. In a number of areas youth theaters, orchestras and choirs are organized by the local youth service officers.

LOCAL INITIATIVE

In spite of the public assistance given the Voluntary Organizations, they retain their independence. They are in no way controlled by the Local Education Authorities in whose area they function. While most of the bigger, private and charitable youth schemes are members of the Standing Conference of National Voluntary Youth Organizations, a body which acts as their spokesman on matters of joint concern, decentralization is encouraged by the establishment of local standing conferences. Their function is to deal with common needs and problems in their areas, and to cooperate with the authorities. The conditions of membership of the Standing Conference include a provision that the organization should be on a national basis, with a voluntary membership of not less than 10,000 between the ages of 10 and 21. Not all voluntary organizations

THEY STARTED IN BRITAIN . . .

The following organizations which offer services to youth have spread their work throughout the world. They were started in Britain.

BOY SCOUTS ASSOCIATION. Founded by Lord Baden-Powell, in 1908. The total world membership in March 1959 was 7,500,000, and the Association had 66 member countries, with 18 other countries now working towards membership.

GIRL GUIDES ASSOCIATION. Also founded by Lord Baden-Powell, in 1910. Membership is spread throughout 44 countries, with more than 20 other countries considering membership. In March 1959, 4,250,000 girls belonged to the Association.

Y.M.C.A. Founded in 1844 in London, by George Williams. It now encompasses 76 countries, has a total world membership of more than 4 million.

Y.W.C.A. Founded in 1855, the Y.W.C.A. was begun in Britain, by two women. Mary Jane Kinnaird began the first hostel for girls in need of living accommodation away from home, and Emma Roberts began prayer sessions from which social activities developed. The two movements combined in 1877, to become the Y.W.C.A. as we know it today. The Association is now represented in 70 countries. It has a world membership of well over 3 million.

qualify for membership; but self-government, individual responsibility for policy and absence of political affiliation are the conditions of membership and are indeed requirements which most voluntary organizations fulfill, whether they are members of the Standing Conference or not.

Both the voluntary organizations and the public authorities attach great importance to complete independence of action and policy in this field.

When so much is centralized it is refreshing to note that the work of the Local Education Authorities no less than the non-official schemes has remained unhampered by rules imposed by any central body. Both the Local Education Authorities and the Voluntary Organizations are of course much more alert to the needs of their areas than any central body could be. Although the system is not ideal, and the quality of the services offered vary from area to area, no one believes that a centrally imposed system would be the answer.

PRIVATE SUBSCRIPTIONS FOR PUBLIC SERVICE

Another important form of youth welfare is provided by organizations

like the National Playing Fields Association which encourages the provision and preservation of public playing fields and playgrounds and advises local authorities and sports clubs on the acquisition, layout, construction and use of grounds. The Association also helps with grants, publications and persuasion, research into requirements and by pioneering new ideas. This Association, which is partly financed by voluntary contributions, and partly by the King George's Jubilee Trust and the King George VI Foundation (both of which are public-subscription memorial funds dedicated to youth work) also provides information and advice to Commonwealth schemes of youth welfare and training. These funds have also helped the Youth Hostel Movement and have financed the training of sports coaches and other youth leaders and instructors.

Another very successful innovation has been the Duke of Edinburgh's award. The scheme has been devised by the Duke himself; his support for youth work has been continuous. Its aim is to provide incentives and further opportunities for boys aged 14 to 18 to achieve a balanced development of character and physique. Tests are conducted, and awards, usually medals and certificates, are presented to those who attain the required standards in for example physical fitness, craftsmanship or skill in various fields. The scheme was opened to girls in 1958. By the end of 1958 after less than two years of existence, 208 local authorities had joined the scheme and nearly 20,000 boys had entered for the awards. The memorial funds referred to above have made this scheme possible. They have also contributed to another scheme which the Duke of Edinburgh has done much to popularize, and this article cannot close without mention of it.

"OUTWARD-BOUND"

For some years now four schools have been maintained in England called the "Outward-Bound" Schools where boys from industry and from private life join for a few weeks' intensive training in seamanship, mountaineering, or other adventurous enterprises. The opening shortly of a fifth school will give the Outward-Bound course to 4,500 boys a year. The schools enjoy wide support from British industry. A number of firms send their younger men on Outward-Bound courses at the firm's expense. The results have obviously encouraged them to continue their support.

Like many post war schemes in Britain, the provision of adequate youth facilities has encountered difficulties primarily those associated with a lack of funds. But the situation is improving. There is a good measure of public support and most important, the response of boys and girls who have benefitted is unmistakable. There will be no shortage of participants as further opportunities are offered; but much more of the same is wanted.

The Chief Registrar of Friendly Societies is a Crown appointment established in 1896. All unions wishing to obtain the benefits of the law regarding taxation, etc. must register. All unions who register must accept the publication of much of their business.

The Trade Unionist and the Registrar

In the bigger trade unions in Britain, officials' pay takes a larger slice of working expenses than in the smaller bodies. The average cost of salaries and allowances comes to nearly three-fifths of all working expenses; maintaining and running the office about a fifth and holding conferences less than a tenth.

In smaller unions, with less than 100,000 members, only half of working expenses goes on officials' salaries; more than a fifth on running the office; and about an eighth on holding committees and conferences.

The man who reveals this pattern of spending by organized labor in Britain — and much other information that is published regularly — is a Government official who, by act of Parliament, has power to register trade unions. His title is the Chief Registrar of Friendly Societies.

Though no union is bound by law to register, today the Registrar reckons that organizations covering nine British trade unionists in every ten are on his books. They are there because they find it helps them to be.

A SAFEGUARD TO THE UNION—AND TO THE PUBLIC

One gain to registered unions is exemption from tax on income from investment used solely in provident funds to finance such benefits as, for example, sickness, accident and death. Another is that a registered union may switch its property from one trustee to another without paying legal fees—a boon to many bodies which hold yearly elections.

In his London office, the Registrar files the detailed accounts which the unions send him every year. On payment of a small fee *anyone* can inspect them. If the accounts are late or irregular, the Registrar can take action through the courts; and none of these provisions excuses the unions from making separate auditing arrangements of their own.

A feature of the most recent report from the Registrar was the rise of ten per cent in union income—the biggest for years. But the report also showed that bigger spending on union administration and on dispute benefit absorbed the extra revenue. Information like this, made public, is not merely a check *on* the unions: it disposes of unwarranted fears *about* the unions.

POLITICAL CONTRIBUTIONS

Under the law governing union spending on party political activities, all unions with political funds must file them with the Registrar, even if they do not become fully registered. "Model rules" for establishing a political fund were laid down as far back as 1913. A union may not use its funds for political expenses unless the purposes have been accepted by a vote of the union members, and the necessary provision in the union's constitution has been registered with the Registrar.

Before the Registrar accepts the registration of a political fund, he must satisfy himself that all members have had the chance to vote in a union-wide ballot and that there has been a clear majority in favour of adopting political objects. Furthermore he has to ensure that members' political contributions go into a separate account.

Today the Registrar reports 125 trade unions with political funds. Most unions with established political funds back the Labour Party, which this year reported a total affiliation of more than 5,500,000 trade unionists.

Political rules must give any member who wishes, the chance to contract out of paying a political contribution. And the Registrar reports that one in eight of the 8,000,000 members in unions with political funds use this right. Members who feel aggrieved about the use of their union's political fund can take their complaints to the Registrar, who can give a legal ruling. Last year he dealt with three cases. Contributions to political funds tend to be a small portion of the total; according to the Registrar they are about one-25th of the total yearly contribution for all purposes.

REGISTRATION AND TUC MEMBERSHIP

Registration has nothing to do with affiliation to the Trades Union Congress, nor does it affect a union's standing in law. By registration a union gains rights and takes on obligations, but by choosing not to register it loses none which it already has.

Among TUC unions some are not registered, and a number which do affiliate are federations in the eyes of the Registrar; he counts their constituent parts separately.

This difference in counting largely helps to explain why there are 400 registered unions and only 185 affiliated to the TUC. Another reason is that a few registered unions are not affiliated to the TUC. At the end of 1957 the total membership in *registered* unions was nearly 8,600,000. That affiliated to the TUC was 8,337,000.

Issues in British Education

Freedom Vs. Equality

A. D. C. Peterson

Director of the Department of Education, University of Oxford.

It is often said that since the war Britain has passed through a peaceful, orderly and legal revolution. In the field of education this is surely true. All kinds of higher education are now the privilege of those who can demonstrate in open competition their ability to profit from them.

But revolutions, whether peaceful or violent, bring new problems as soon as they have liquidated the old. And the same is true of new educational systems. How to combine freedom and equality?

It is true that under the new English system any boy or girl is free to claim secondary education at a Grammar or Modern School according to his ability without any payment until the age of 18 or 19. It is true also that the government will pay, if the parents cannot afford it, the whole cost of university education. Not more than one student in five at Oxford or Cambridge today is being paid for entirely by his own or his parents' funds. There is certainly freedom here, for the government which supplies the money does not lay down which university the student should go to nor what subject he should study.

How can this freedom be combined with equality? Clearly all students will not benefit from a full academic secondary education: more clearly still, they will not all be capable of a university course. The English system, therefore, is to select at the age of eleven those who can best profit from an academic secondary education. These go to the Grammar Schools, and the remainder—about three out of every four—to Modern or Technical Secondary Schools, where their education usually ceases at 15 or 16.

Similarly the candidates for the university are selected by open competitive examinations. Money no longer confers the right to higher education: its place has been taken by examination success. *In other words, there is still inequality, but it arises from the fact that men are of unequal intelligence; not from the inequality of wealth or position.*

Yet there is much discussion in England today over the problems which the new system has produced. To select those who are to receive higher education from all ranks of society simply on the basis of their ability is clearly more just than the old way. It gives to each individual the freedom to make the best use of his ability, to reach the highest posts, and to serve his country in the most useful way. But we must be certain that the tests

by which they are selected are really accurate; and we must be certain that those who are not selected are also given the chance to make the best use of their ability.

HOW BEST TO SELECT

Educational discussion in England therefore centers now around the question of selection. There are those who say that an examination at eleven cannot distinguish accurately enough which children are capable of advanced secondary education. They would prefer to abandon selection at this age and educate all children together until they are older. They believe that this would be more just, would promote social-equality and would prevent clever children from missing the more advanced secondary education because they had developed their talent late.

Others believe that this more equal treatment would deprive the clever children of the freedom to progress at their own fast pace in the selective grammar schools. They are anxious, therefore, to keep the present division into different types of school at eleven, but so to improve the standard of the modern secondary schools that children in them shall have equal opportunity to make the best use of their talents. The comprehensive school on the lines of an American high school is one answer and several have been opened especially in the London area.

A major need is for smaller classes and better teachers. For this reason the government has decided to extend the training period of all teachers to three years and at the same time to build more training colleges to provide 12,000 more teachers a year.

PRESERVING UNIVERSITY STANDARDS

Entry to universities also presents new problems now that a university career is open to the poorest as to the richest in the country. There are many more applicants than the universities can teach and many more wish to go to the more famous universities than to the new ones founded since the war. Again examinations are the test, but there are some people who fear that this competition is producing a generation of young people who have specialized too early in one branch of learning and have not a wide enough culture or experience of life. Others point to the problems so frequently discussed in America, of lowered standards, the result of admitting to the universities one and all who want initials after their names.

Both countries have much to learn from each other in the education revolution. Both are trying to give freedom and equality of opportunity to all people to follow the educational course for which they are best fitted. Both are concerned to preserve the standards of true scholarship.

Railroading is a grand passion shared by many Britishers and Americans. The future of the railroads is also a vital economic issue in both countries. The Head of Britain's Southern Regional System discusses the outlook.

British Railways Now

By Sir Philip Warter*

The first great Railway Age in Britain began over a hundred-and-twenty-five years ago. The second—and no traveller on British Railways today can fail to see the trackside signs and portents—is just beginning.

British railways were the first railways in the world. In the 1830's, after seventy years of canal transport which had given manufacturers only a tantalizing glimpse of the possibilities of mass-production, the country was really opened up to trade. And to travel, too, for the new trains, slow as they were at first, were still three times quicker than the stage coaches and canal "fly-boats" whose star was now to wane. The developing railways led to opening up of the ports for a greater flow of exports—and another export, invisible, was British railway "know-how" and influence which has continued ever since and which is reflected in railway systems in many parts of the world.

From these beginnings the railways of Britain have developed into a complex national main-line and branch feeder system which is the busiest and one of the most intensive railway systems in the world. Rarely in Britain is one far from a railway—the total route mileage of over 19,000 miles represents a mile of railway to every $4\frac{1}{2}$ square miles of territory. Over these 19,000 miles a thousand million passengers travel every year, over 18,000 million ton-miles of freight are operated, 40,000 passenger and goods trains are run each weekday, and during the morning and evening peak hours of business travel about $1\frac{1}{2}$ million people are moved by rail into and out of our principal cities.

Life in Britain without railways would be difficult, if not impossible. The Government is categoric on this point: "The national interest requires that the future of the railways should be assured. As carriers of passengers over long distances and of suburban passengers in large numbers to and from work and as carriers of bulk freight, the railways are essential and will continue to be so for as long as can be foreseen." (White Paper—*Proposals for the Railways*—October 1956.)

*Member of the British Transport Commission and Chairman of the Commission's Southern Area Board. Article reproduced by permission from the National Provincial Bank Review.

The need for an assurance of that sort stemmed from the serious position which the railways faced after the Second World War—much of their equipment out-of-date and all of it run down—and which the British Transport Commission largely inherited in 1948 when, by the Transport Act of 1947, the railways came into public ownership. The technical re-equipment of the railways was long overdue, but for thirty years the various companies had been unable to undertake any large schemes of modernization or even to maintain adequate programs of replacement. In the early 1930s, when the need for re-equipment had already become acute, the railways were hard hit financially by the prolonged depression in the heavy industries, and in the subsequent years up to the war the challenge of road transport was just as decisive in preventing the raising of large sums of new capital. During the war the overworking of assets accentuated the problem.

The entry of the road haulier on the transport scene found the railways still with an old-fashioned system of freight charges which were fixed, published for all to see, and were the same for every customer, large or small. The road hauliers, free to adopt business methods, selected their traffic, looked up the railway rate, quoted something less, and carried the goods by road. And since the major part of all railway income comes from freight traffic the position became serious indeed.

On the passenger side, the development of road competition on the main routes has made it impossible to continue to subsidize, as in the days of monopoly, the hopelessly uneconomic railway branch services.

That was the position inherited by the Commission.

WHO WANTS RAILROADS NOWADAYS?

The problem of rehabilitating British Railways inevitably posed the fundamental question: "Do we need our railways at all?" The urban and suburban passenger services daily move 1½ million people in the great populated areas like those of London, Glasgow, Birmingham and South Lancashire. These movements, made in brief, heavy surges with which the roads could physically not cope, demand a concentrated loading, control and timing which railways alone can give. A railway can deal with at least 20,000 passengers an hour per track, and a large city terminus may handle over 100,000 people on a busy morning. In the Southern Region of British Railways alone a daily total of about 850,000 passengers travel into and out of the London termini each day. Their movement only one way by road, even on a fine, dry morning, would be at best an exceedingly long and difficult, if not impossible, operation. To repeat the movement in the evening, and go on doing it twice daily throughout the year, wet or fine, clear or foggy, would be out of the

question. One cannot ignore the already serious street congestion in London and other big cities. If to that congestion were added the vast fleets of buses and coaches needed to deal with the daily rush-hour surges, people would be driven to consider well that "it is no good setting out unless you can arrive." Clearly, there is no alternative to these peak urban and suburban railway services, although their very nature tends to make them expensive to provide.

Neither is there any real road alternative to the long-distance train services over the trunk routes. The railway cost per seat mile on such services is much lower than the comparable road cost.

Nearly 1,000 tons of bulk freight can be handled by a train crew of no more than three men, and regular bulk mineral traffics such as coal, coke and iron ore are usually carried far more cheaply and conveniently by rail than by road, even over short distances.

It is clear that, in spite of the rapid growth of road and air transport, the country must continue to look to the railways to carry the main flows of bulk traffic, both passenger and goods, for many years to come.

MODERNIZATION AND RE-EQUIPMENT

That conclusion was supported by the Government, and in 1955 the attrition years of capital starvation came at long last to an end. Early that year the British Transport Commission were able to announce a far-reaching £1,200 million Plan (rising costs have already stepped up that figure to £1,500 million) for the Modernization and Re-equipment of British Railways, the aims of which have been thus stated:

"The Commission are determined to exploit the opportunities for re-equipment which modern science and techniques present, and to transform the operations of British Railways so as to offer the public a rail service second to none, whilst deriving from the equipment the full economic benefit it can provide."

The most dramatic element of the Fifteen-year Plan, the abolition of steam, is now well known, but it is worth recalling the main headings of the program on which four years' work has now made substantial inroads:

First, steam must be replaced as a form of motive power, electric or diesel traction being rapidly introduced as may be most suitable in the light of the development of the Plan over the years:

Secondly, much of the existing steam-drawn passenger rolling stock must be replaced, largely by multiple-unit electric or diesel trains; the remaining passenger rolling stock must be modernized;

Thirdly, the freight services must be drastically remodelled. Continuous brakes will be fitted to all freight wagons, which will lead to faster and smoother operation of freight traffic; marshalling yards and goods

terminal facilities will be re-sited and modernized;

Fourthly, expenditure will be required on sundry other items, including improvements at the ports; staff welfare, office mechanisms, etc.; and a sum of at least £10 million for development and research work will be associated with the Plan.

No modern railway system, however, can possibly give service to everyone everywhere and at any time, and it is quite clear that our railways must contract into a smaller but healthier body. The railway can no longer serve every minor community and provide transport to the far ends of sparsely populated areas. More economical means of transport now exist for these purposes.

The Commission have a statutory obligation to make their undertakings pay, and if a branch railway service is uneconomic, and cannot be made remunerative, then its withdrawal is the only answer. Unfortunately, in spite of the work done by the independent Transport Users' Consultative Committees, it is difficult to make transport users face realistically the fact that to have an up-to-date transport system involves parting with the dead limbs. The common level of fares, incidentally, does nothing to bring home to the branch line traveller, sitting in solitary comfort in his compartment but paying no more per mile for his journey than any of the five or six hundred passengers in a main-line express train, the excessively high cost of carrying him. But the Commission cannot ignore this drain on their resources, and it is inevitable, as envisaged in the Plan, that there should be "a marked reduction in the stopping and branch line services which are little used by the public and which, on any dispassionate review of the situation, should be largely handed over to road transport."

But, the main trunk routes are being so developed as to make still faster and safer the long-distance services of British Railways. Average speeds of 75 m.p.h. between stops is the ultimate aim—an aim which gives emphasis to the large program of signal engineering work which is in being.

IMPROVED FREIGHT SERVICES

In no sphere of railway operations is modernization having a greater impact than on the vital freight side. Over a third of the total freight mileage on British Railways today is run at express speeds, and already there are over 800 overnight express freight trains, all running to a strict time-table, and all giving an assured next-day arrival.

To complement these dramatic improvements in freight operation — improvements which nevertheless are only a beginning — is a new-found flexibility in rate-fixing, for in 1957 the Commission won a long sought measure of business freedom in charging methods. This freedom is being increasingly used to develop better and faster freight services, and in the

mounting drive for railway freight there is clear evidence that rates, tailor-made to the traffic for the first time in the history of British Railways, are highly competitive.

THE PASSING OF STEAM

Unquestionably, the greatest drama of the Modernization Plan is the abandonment of the steam locomotive, in a country which invented it and produced a race of locomotive engineers such as Stephenson, Ramsbottom, Fletcher, Stirling, Johnson, Drummond, Churchward and Gresley. There will always be those who will look over their shoulder whatever decisions are made, and there will, indeed, be many railwaymen who for reasons of sentiment and tradition will watch the passing of steam from our railway lines with very real regret. But the tremendous advantages of diesel and electric traction in terms of cleanliness, capacity and operating efficiency are too real to be gainsaid.

The choice of both diesel and electric traction is deliberate. The real aim is electrification. But this takes time and involves extensive engineering work which can seriously disrupt existing services, as some passengers on British Railways are finding today in this very uncomfortable interim period when much has been accomplished but much more remains to be done. So diesel traction, easy to install and offering many of the advantages of electricity is developing in Britain side by side with electric traction.

Electric traction will not only transform the character of railway services and the appearance of stations and other installations; it will also change the skyline. Unlike the recently opened electrification to Ramsgate and to Dover via Canterbury—first part of the Southern Region scheme for the whole Kent coast—which extends the third-rail system already widely used in the Southern Region, electrification on other regions of British Railways will be on the 25,000 volts A.C. system using overhead wires.

FARES AND FINANCES

Until the further rewards of modernization are harvested, British Railways cannot pay their way, and special arrangements are in force with the Government to cover the lean years. By these arrangements the Government have endorsed the Commission's belief in the soundness of rebuilding British Railways, and their certainty that the nation's investment will in the end yield rewarding dividends.

Although the major components of the Plan, such as electrification, do not show rewards until the whole scheme is in operation, the revenue results are already reflecting the better pattern of service provided by new equipment. The use of diesel multiple-unit trains for stopping services

has brought big, immediate increases in receipts. Over 2,000 multiple-unit diesel vehicles are in use and showing such increases as 55 per cent. in Hampshire and 112 per cent. on Tees-side.

What will the public have to pay for all this?

The widespread impression that railway fares have risen “scandalously” since pre-war days to “iniquitous” levels has no basis whatever in fact. Whereas, in money terms, the average fares on British Railways are about double pre-war, other prices have in general risen to about three times pre-war level. A typical wage-earner, in fact, is able to earn the price of a railway journey in much shorter time today than was the case before the war. Despite public incredulity on this point, there can be no case at all for the levels of railway fares to be sacrosanct while other prices follow the laws of economics and rise to market levels. A properly efficient railway system cannot be run on the cheap; it must earn the proper prices.

RAILWAYS AND ROADS

It is inevitable that as the new British Railways come more fully into their principal rôle in the transport business of the nation, their position *vis-à-vis* that of the road hauliers will be keenly debated. In 1958 the roads took about five times more capital investment than the railways (some £730 million on the roads against £145 million on the railways) and this disparity in favor of roads is likely to be even larger in the years ahead. It is sometimes overlooked, too, that a railway must not only provide and maintain its own tracks—a heavy item, indeed—but must also provide the vehicles to run on them.

But it is not a case of railways or roads. Both are vital, both have traffics and tasks they are best suited to move and carry out, and both, in more equitable conditions than have previously existed, will have much to gain from a healthy competition.

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The Commonwealth

This note is a brief explanation of the basis of the Commonwealth association and of the way in which this association maintains a voluntary co-operation.

The Commonwealth comprises not only the United Kingdom and the other independent Member countries (previously known as Dominions), but a variety of territories at different stages of constitutional development which are partly or wholly dependent upon the United Kingdom and other of the Member countries.

The first classic definition of the status of, and of the relationship between, the United Kingdom and the Dominions (as they were then known) was contained in the *Balfour Declaration*, which was drawn up subsequent to the Imperial Conference of 1926. This referred to the United Kingdom, Canada, Australia, New Zealand and South Africa (as well as the Irish Free State, which subsequently left the Commonwealth, and Newfoundland, which has now become a Province of Canada) as "*autonomous communities within the British Empire, equal in status, in no way subordinate one to another in any aspect of their domestic or external affairs, though united by a common allegiance to the Crown and freely associated as members of the British Commonwealth of Nations.*" It is important to remember that, although Imperial Conferences of this period were concerned to define an intra-Commonwealth relationship (which in practice already existed), no attempt was made then or at any subsequent time to lay down a constitution for the British Commonwealth.

CONSTITUTIONAL LINKS

The constitutional development of the dependencies of Commonwealth Governments is a matter lying solely within the discretion of the Member country concerned. For example, the question when Nigeria (or Samoa) should be granted independence is one for the United Kingdom (or New Zealand) alone to decide. But the further question whether Nigeria (or Samoa), once independent, should be accepted as a fellow-Member of the Commonwealth is one for decision by all the existing independent Members of the Commonwealth.

The Commonwealth possesses no common structure. Its members are not all bound together by formal treaties, alliances or obligations. There is no central control of foreign or economic policy. It is what it describes itself as being—a free association of wholly independent and equal States. Nevertheless individual members of the Commonwealth have joined re-

RECENT HISTORY

Legal effect to the definition contained in the Balfour Declaration was given in Britain by the *Statute of Westminster, 1931*. This in particular made clear that *Parliament at Westminster could in no circumstances legislate on behalf of another Dominion Government except at that Government's express request*.

The major developments in the Commonwealth association since that time have been:—

- The establishment of India and Pakistan as Members of the Commonwealth in 1947 (the Indian Independence Act of 1947 established the new "Dominions" of India and Pakistan); of Ceylon in 1948; and of Ghana and of Malaya in 1957.
- The recognition that a country with a wholly republican Constitution can remain a Member of the Commonwealth. India and Pakistan are now Republics. Henceforth such countries agree to recognize the Sovereign "as the symbol of the free association of its [the Commonwealth's] independent member nations and as such the Head of the Commonwealth." This elasticity has subsequently permitted Malaya as a country with an elective monarchy to be admitted to membership of the Commonwealth.
- The departure from the Commonwealth of Eire (formerly the Irish Free State) and Burma. Eire's position had for long been an anomaly, but other Commonwealth Governments had held that her constitutional innovations up to and including the 1937 Constitution did not affect her position as a Member of the Commonwealth. In 1948 Eire declared her separation from the Commonwealth, although the United Kingdom and the other independent Commonwealth Governments subsequently agreed to treat citizens of the new Irish Republic as "non-foreign". Burma had formerly been a dependent territory of the United Kingdom, but on being granted independence in 1947, chose not to seek membership of the Commonwealth.

gional organizations such as NATO and SEATO and thus found themselves in alliance with other Commonwealth Members. In addition on first attaining independence and being without adequate defense forces of their own some Commonwealth Governments have signed Defense Agreements with Britain. Beyond this there is no common defense policy.

THE COMMON INTEREST

The essence of the association, however, is to provide a means of discussing issues of common interest. It is an accepted convention of this association that no member should interfere in the internal affairs of another member, and that no member should discuss with another member the internal affairs and internal policies of a third member. Equally it is an accepted convention that, so far as is possible, no member shall embark upon a course of action known to affect the interests of another member without prior consultation—but members are entirely free to take their own decisions, and serious divergencies of opinion have on occasion arisen when members agreed to differ on certain issues.

With the exception of Canada, all Members are members of the sterling area. (The sterling area also includes some other countries not within the Commonwealth.) There is thus a general interest in maintaining and strengthening sterling as an international currency, since the bulk of the international reserves of the rest of the sterling area are held in sterling. But all members of the sterling area have full control over their sterling holdings and are free to draw upon the gold and dollar reserves held centrally by Britain. Britain operates no exchange control over current or capital transactions by the rest of the sterling area with the outside world, though, in the overriding interests of maintaining the strength of the £, the latter adopt exchange control policies similar to those of the United Kingdom. Thus the United Kingdom's consent was not required, nor was it sought when the Ghana Government decided to make a credit of £ 10 million available to the Government of Guinea.

Similarly each member of the Commonwealth is free to adopt its own policy in economic matters. Under the Commonwealth or Imperial Preference system, Commonwealth countries concede certain trade advantages to one another. Britain for example allows duty-free entry to most Commonwealth goods; some other Commonwealth countries grant certain margins of preference to goods manufactured in Britain and elsewhere in the Commonwealth. But there is no central agreement nor is there central direction: Commonwealth countries are autonomous in tariff matters. *The essence of the system is reciprocity, and the system is based on a series of bilateral agreements between the countries concerned.*

Some Commonwealth Dates

- 1839 Durham Report (relating to Canada) laid down principles of self-government.
- 1867 British North America Act (Canada)
- 1901 Commonwealth of Australia inaugurated.
- 1907 New Zealand proclaimed a Dominion.
- 1909 South Africa Act.
- 1926 Imperial Conference at which Status of Member nations was defined.
- 1931 Statute of Westminster.
- 1947 Independence of India.
- 1947 Independence of Pakistan.
- 1948 Independence of Ceylon.
- 1949 Newfoundland became a province of Canada.
- 1950 India became a republic within the Commonwealth.
- 1953 Inauguration of Federation of Rhodesia and Nyasaland.
- 1956 Pakistan became a republic within the Commonwealth.
- 1957 Independence of Ghana (formerly the Gold Coast).
- 1957 Independence of Federation of Malaya.

CONSULTATION

The Commonwealth thus maintains a continuous exchange of views on issues affecting foreign and economic policy. At the day-to-day level, these exchanges are conducted through the Commonwealth Relations Service (see below). They are reinforced by a multiplicity of Standing Committees set up to deal with specialized topics. On occasion, special meetings of representatives of Commonwealth Governments are called to consider urgent or important issues—*e.g.*, periodic discussions of general objectives of economic policy—but agreements reached at these meetings are not mandatory on individual members. And at the highest level meetings of Commonwealth Ministers are held to review and discuss major policy questions—Finance Ministers usually meet once a year, Prime Ministers at somewhat less frequent intervals. The basis of all such consultation and discussion is that of voluntary co-operation. Any attempt by any member to impose common policies on the other members would be fruitless and, if persistently attempted, would inevitably weaken what the President of India has described as “the silken bond around the Commonwealth.”

The Commonwealth Relations Service is the agency by which the United Kingdom’s part in the continuous process of consultation and co-operation is carried on, and by which Government business with other Common-

wealth countries is mainly conducted. Its Ministerial head is the Secretary of State for Commonwealth Relations. The Service consists of the Commonwealth Relations Office in London and of the United Kingdom High Commissioners' Offices in other countries of the Commonwealth. Its work is largely diplomatic in character and covers all aspects of United Kingdom policy, particularly in external affairs. In effect, and subject to the particularly close relations between the Commonwealth Governments, the functions of the Commonwealth Relations Office are in general similar to those of the Foreign Office, with which the Commonwealth Relations Office works always in close association.

As regards relations with countries outside the Commonwealth, each member maintains its own Diplomatic Service, and most of them have their own Ambassadors in various foreign countries. Where a member is not so represented, the United Kingdom Ambassador in the foreign country concerned represents the interests of the Commonwealth country to the extent that the Government of the latter country desires. It is, however, open to any such member of the Commonwealth to adopt other channels of communication if it thinks fit. In some instances this takes the form of communication between the High Commissioner for the Commonwealth country in London and the Ambassador of the foreign country also in London.

THE QUEEN'S REPRESENTATIVE

Since the Queen is normally resident in the United Kingdom, the majority of the constitutional functions which she performs in the United Kingdom, such as the appointment of Cabinet Ministers, the summoning and dissolution of Parliament and the Assent to legislation passed by the Legislature, are performed in those countries of which Her Majesty is Queen by a Governor-General on her behalf. In many instances he is a citizen of the country concerned *but, even if he is a United Kingdom citizen, he is in no way a representative of the United Kingdom Government, but is solely Her Majesty's Representative* and in all public affairs he acts, as the Queen does in Britain, on the advice of his Ministers. He is appointed on the advice of the Government of the country concerned. Where any executive action is taken by the Queen herself either in Britain or on the occasion of a visit to another Commonwealth country, Ministers of that country tender their advice direct to Her Majesty and *not* through United Kingdom Ministers who are in no way concerned in such a matter. The representative of the United Kingdom Government in a member country of the Commonwealth is, as indicated above, a *High Commissioner* whose functions are generally similar to those of an *Ambassador* in a foreign country.

This article describes the scale and character of UK capital flows to the Commonwealth, and recent action to increase the flow of public funds.

Capital for the Commonwealth

All the overseas Commonwealth countries need more development capital than they can hope to provide by their own internal savings. The United Kingdom is the only net exporter of capital in the Commonwealth and funds flow from Britain in three main ways. (Some other Commonwealth countries also export capital but import it on a larger scale). First, there is a great deal of private investment from Britain in all Commonwealth countries. Secondly, the British Government has made and is making grants and loans to Commonwealth Governments. Thirdly, there are British repayments of capital and payments of interest on special loans made to Britain during and after the war.*

Apart from a natural desire to help other Commonwealth countries, Britain has a direct economic interest in maintaining the flow of capital to them. The economic expansion of the less-developed countries is one of the keys to the growth of world trade. For all these reasons, the Government has taken a number of steps—discussed below—to provide capital, particularly for basic investment which does not yield profit quickly and therefore does not attract much private capital. *Private investment must remain, however, the major source of capital.*

The total flow of capital to the sterling Commonwealth has averaged more than £200m. a year in recent years; to the whole Commonwealth it has been more like £240m. (excluding the payments on special Canadian loans). Taking the whole flow of capital together, private and public, the degree of help Britain provides depends on her own investment needs at home, the state of her current external balance, and the size of the reserves; and it also depends, of course, in real terms on her capacity to produce competitively an adequate flow of the capital goods that the developing countries need.

PRIVATE FUNDS

Private money to the Commonwealth flows through three main channels:

(i) *Direct Private Investment.*—This includes the transfer of new funds by British firms to their enterprises in Commonwealth countries;

* The only Commonwealth country to which this applies is Canada, and the figure has averaged about £20m. a year in recent years.

the re-investment of profits earned by the enterprises; and the direct export of equipment from the UK to these enterprises. It includes, notably, the setting up of branches by big British motor firms, expenditure by the oil companies on new wells and tanker terminals, and the traditional investment in rubber and tea plantations and in tin and copper mines.

(ii) *Funds from the London Market*.—Official consent is required for all overseas issues on the London market, whether by public authorities or by private companies. In practice, access to the market is largely confined to borrowers in the sterling Commonwealth.

(iii) *Commonwealth Development Finance Company*.—This company was established in 1953 to channel funds into Commonwealth development schemes likely to strengthen the external position of the sterling area, and in particular those schemes for which sufficient funds cannot be obtained from normal sources. The company seeks mainly to assist development by private concerns. Its capital, subscribed by a large number of British business firms and by the Bank of England, is now £26m.; and it may borrow for re-lending up to twice the amount of its issued capital. The company has invested in a wide range of enterprises, including pulp and paper in New Zealand, electric power in Malaya, and timber in Swaziland.

PUBLIC FUNDS

Public funds are made available in three main ways:

(i) *Direct Government-to-Government Loans and Grants*.—A large

AMOUNTS AUTHORIZED FOR U.K. LOANS AND GRANTS TO STERLING COMMONWEALTH

(Excluding direct investments by U.K. firms)

	(£m.)					Annual Average 1954 to 1st half 1959	
	1954	1955	1956	1957	1958	1st half 1959	1st half 1959
Private Loans							
London Market	86.6	63.3	66.6	84.8	78.9	27.7	74.2
Commonwealth Development Finance Company	5.5	3.0	3.7	1.0	1.5	0.2	2.7
	92.1	66.3	70.3	85.8	80.4	27.9	76.9
Public Loans and Grants							
Colonial Development and Welfare Acts	15.6	21.7	32.0	19.1	20.0	12.5*	21.9
Colonial Services Vote**	28.4	22.4	18.6	21.1	24.3	11.3	23.0
Export Credits Guarantee Dept.	10.0	—	15.0	—	28.5	13.0	12.1
Other loans and grants** ...	9.1	7.1	8.2	9.1	9.9	4.9	8.8
Colonial Development Corp. ...	6.4	8.2	20.5	5.0	5.0	7.1	9.5
Disbursements from U.K. (18%) subscription to World Bank	2.3	2.7	6.7	15.1	16.8	14.8	12.2
	71.8	62.1	101.0	69.4	104.5	63.6	87.6
TOTAL	163.9	128.4	171.3	155.2	184.9	91.5	164.5

* Notional figure representing one half of C.D. and W. Vote provision for the year.

** Disbursements, based on financial year figures.

part of the funds flowing directly from the British Government to the Commonwealth is made available under the Colonial Development and Welfare Acts. It supplements money raised by Colonial Governments on the London market or within their own territories, and is spent on education, roads, agriculture, fisheries, forestry, housing, water supplies and health services. Funds are also made available on the Colonial Services Vote. Another part of the flow consists of loans made to Commonwealth Governments by the Export Credits Guarantee Department to finance the purchase of British equipment.

(ii) *Colonial Development Corporation*.—The Corporation was set up in 1948 to assist development projects in the Colonies; these projects cover a wide field, from electricity and water and agriculture and mining to houses and hotels. The Corporation is run on commercial lines, and has a statutory obligation to pay its way, taking one year with another. It can borrow up to a total outstanding, at any one time, of £160m.

(iii) *Sterling Releases to World Bank*.—In 1953 Britain announced its aim to make available to the sterling Commonwealth up to £60m. over a period of about six years—the money to come out of Britain's subscription to the World Bank and to be lent by the Bank. Practically all of the £60m. has now been lent, for such projects as steelworks in India, power stations in Pakistan and railroads in South Africa and Nigeria. A further £20m. is now being made available under the same arrangements.

HOW MUCH?

How large is the total of British investment, both private and public, in the sterling Commonwealth? It has been estimated, on the basis of figures of widely differing reliability and comparability, that total British private investment in the Commonwealth as a whole, including direct investment, might in recent years have been around £150m. a year. According to the figures on the previous page, public investment has averaged about £88m. a year, making a combined total of private and public investment in the Commonwealth alone of more than £200m. a year (over 1 per cent of the national income).

The flow of Government funds is increasing. At the Montreal Conference last year Britain announced a system of *Commonwealth Assistance loans* available at the same rate of interest at which the British government itself borrows. For the Colonies there were to be *Exchequer loans* at the same rates to make good any shortfall in necessary finance which could not be raised on the market, and further funds were to be made available under an extension of the existing *Colonies Development and Welfare Acts*.

These further funds have now been authorized.

The fundamental features of membership of the Sterling Area remain:

- *the members use sterling as the normal means of external settlement; and their own currencies are linked with sterling at a fixed rate of exchange;*
- *they generally hold the major part of their reserves in sterling;*
- *they look to the United Kingdom as a major source of external capital (at least as far as Commonwealth countries are concerned);*
- *they co-operate to maintain the strength of sterling.*

Sterling and the Sterling Area*

The way in which sterling, the domestic currency of the United Kingdom, acts also as a major international currency is seldom fully appreciated and understood. The nature of the Sterling Area is also imperfectly understood, partly because the concept is not exactly defined and indeed changes gradually from time to time. This article does not attempt to go into technical banking detail, but rather describes how sterling has come to be an international currency, and what this means for Britain itself and for other countries inside and outside the Area.

WHY STERLING IS AN INTERNATIONAL CURRENCY

The sterling system originated in the nineteenth century with the emergence of Great Britain as the world's foremost trader and as the chief market to which the primary producers of the world sent their output for sale and to which they looked for stores, manufactured goods and capital equipment. With international trade extensively conducted through London and largely financed by means of bills drawn on London, the natural result was that traders and bankers throughout the world held balances in sterling in London to meet the cost of imports and the demands of bill finance. In course of time, the central banks of certain countries came to hold a part of their exchange reserves in sterling. For very many years prior to the second World War, therefore, a number of countries had been closely linked with sterling and formed a group which in the 1930's came to be known as the sterling bloc. They were not by any means all Dominions or parts of the British Commonwealth of Nations but included such diverse countries as those in Scandinavia and Thailand. *The common denominators were (1) that a substantial proportion of their trade was with the other countries in the sterling*

*This article updates much of the material in the two articles on Sterling and the Sterling area which appeared in British Affairs for Sept. 1958 (Vol. II No. 3). Reference to those articles is invited, especially for definitions of some of the terms used here.

area, (2) they traded with the world on a sterling basis, (3) pegged their exchange rates on sterling and (4) held the bulk of their reserves in sterling. There was nothing formal at all in the arrangements but they were essentially practical results of financial and economic evolution.

In such a system the foreign exchange income of the whole area flowed naturally to London as a consequence of normal business and banking practices. Exporters sold their export proceeds to their local banks against the local currency in which they kept their accounts and met their expenses. Most often the proceeds so sold were already in the form of sterling and any foreign exchange arising had already accrued directly or indirectly to London; when another currency was involved, ordinary practice led the banks to convert it into sterling as their common external currency or common source of liquidity for surplus funds, and the same result followed: the foreign exchange gravitated to London. Exchange Control played no part in this natural centralization.

THE STERLING AREA

There is often confusion as to what the term "the Sterling Area" covers, and it is not a term with a precise meaning. The Sterling Area may be defined, however, as more than a grouping of the countries described as "Scheduled Territories" in the United Kingdom's Post-War Exchange Control legislation. *It is essentially a group of countries, most but not all of them members of the Commonwealth, who follow generally comparable policies in their overseas transactions, in particular pegging the rate for their currency on sterling and holding the bulk of their reserves in sterling.*

Despite the great changes of the last thirty or forty years and the establishment of exchange controls throughout the Area during the last war and their subsequent persistence, the four earlier characteristics of the

Membership of Sterling Area

The Sterling Area comprises all Commonwealth countries (except Canada), together with Burma, Iceland, the British Protected States in the Persian Gulf, the Irish Republic, Jordan, and Libya.

Included are at present nine sovereign independent states: the United Kingdom, Australia, New Zealand, South Africa, India, Pakistan, Ceylon, Ghana, and the Federation of Malaya, with their dependencies.

sterling system still largely hold for the Sterling Area today, though they have been modified by developments inside and outside the Area in a number of ways:—

- (i) The free interchangeability between sterling and gold, which established a guarantee of the value and a limitation on the volume of sterling, has been removed.
- (ii) As a consequence of the outbreak of war in September 1939, exchange control was set up in the United Kingdom, and the Sterling Area was formalized as a rather smaller group of countries than made up the old sterling area. Each member of the Area set up its own exchange control, but all worked on the same lines and care was taken to ensure proper co-ordination of method. In general, sterling was, and is, allowed to flow within the Area free from any restrictions. Some Sterling Area countries do, however, impose restrictions on movements, especially capital movements, to the United Kingdom and other Sterling Area countries. Control of investment in the non-sterling world by residents of the Sterling Area, which was strictly enforced following the outbreak of war has been maintained, (though in varying degrees and with some relaxation), ever since.
- (iii) Most of the independent members of the Area now have Central Banks of their own and most are members of the International Monetary Fund with par values for their currencies defined in terms of gold or the United States dollar. In most of them, too, the currency link with sterling is no longer a statutory obligation. But despite this in practice it has been maintained, the RSA (Rest of the Sterling Area) countries keeping a fixed link in day-to-day dealings between their own currency and sterling.
- (iv) During the 1939-45 war, a huge accumulation of sterling balances took place. Moreover as a result of the growth of exchange controls, these balances came, to a greater extent than before, to be held in the control of Central Banks and to be treated as national foreign exchange reserves, their size and trend becoming considerations of national policy just as are the gold and dollar reserves of Britain and other countries.

HOW STERLING RECOVERED FROM THE WAR

To pay for wartime supplies the United Kingdom requisitioned gold and foreign currencies held in London and controlled the freedom to convert sterling held in London. At this time legal definition as “Sterling Area” (later as “Scheduled Territories”) was given to the principal group

of countries which used sterling to settle their debts and held their reserves in London. These countries, the members of the Sterling Area, whilst retaining the ability to convert their sterling balances into gold and foreign exchange, agreed to do so only to make essential current payments.

There was still a very large measure of freedom of trade and settlement within the Sterling Area, constituting the largest multilateral trading system in the world. This freedom extended to all transactions between United Kingdom residents and Sterling Area residents. Transactions of residents in other sterling countries were governed by their own Exchange Controls, most, but not all, of which tended to allow complete freedom for transactions with sterling countries. But in the early post-war years, transactions between the Sterling Area and the rest of the world remained severely restricted.

For this there were two main reasons. *The first* was the strain imposed by the war itself. The United Kingdom paid for much of its war expenditure in sterling, largely to other sterling countries. *As a result the sterling holdings of overseas countries rose to the huge sum of £3,700 million.* But United Kingdom holdings of gold and foreign exchange, far from rising proportionately, were in grave danger of running out during the early war years and were thereafter extremely short in proportion to United Kingdom liabilities. *The second reason* was the scarcity of dollars in the immediate post-war period. Practically every country urgently wanted American (and Canadian) supplies of food and materials and capital equipment, but hardly any were able to earn enough dollars to pay for them.

CONVERTIBILITY MOVES

In July-August 1947 a move to convertibility was undertaken in accordance with the terms of the Anglo-American Loan Agreement of 1945, but the results showed that the war-time disruption of international trade and payments still precluded a return to free conditions at that time. By 1950, facilities allowing sterling to flow freely over the greater part of the non-dollar world had been developed. The formation of the *European Payments Union* ended Britain's bilateral relations with European countries. Instead a general multilateral settlement was introduced for this area; and the whole Sterling Area was linked to this by the United Kingdom's membership. Indeed, the E.P.U. settlements reflected from the start all transactions by E.P.U. countries settled in sterling, whether with other countries of the sterling area or with third countries, since sterling was allowed to move freely between non-dollar third countries and E.P.U.

A further step was taken in March 1954 when the *Transferable Account Area*, a group of countries within which non-residents could transfer sterling freely, was extended to embrace all countries outside the dollar and sterling areas; but "*transferable sterling*" could still only be converted into dollars in unofficial markets and at a rate depending on the vagaries of those markets.

In 1955, the Government announced that the Bank of England, as managers of the United Kingdom reserves, would intervene in support of sterling in overseas markets when they thought fit, and from then on the rate for transferable sterling never fell much below the official rate. In December 1958 transferable sterling was formally merged with American Account sterling so that thereafter any sterling acquired by non-residents, whether from current transactions with the Sterling Area or from transfers from other non-residents, was in general freely transferable to any other non-resident or member of the Sterling Area or *freely convertible into dollars or any other currency at the official rate*. (The exception is that sterling arising out of sales by non-residents of United Kingdom securities and other capital assets, 'security sterling,' may only be sold for foreign currency in unofficial markets and may not be used for current payments to the Sterling Area.)

THE INTERNATIONAL USE OF STERLING TODAY

Sterling is making a sizeable and indispensable contribution to world trade today in two ways. Firstly, it is the medium of exchange through which about 40 per cent of the world's trade is conducted. Secondly, it is the currency in which about one-sixth of the world's reserves are held.

In its trading aspect, the contribution of sterling is not limited to the advantages of its wide acceptance and availability. It also provides a close link with the financial services provided by the City of London—banking, insurance, short and long-term credit, etc. There are no adequate alternatives to these services elsewhere.

Since most of the Sterling Area's foreign exchange transactions go through London, it is still convenient for most overseas Sterling Area members to hold their reserves there, in the form of sterling balances. (An exception is that South Africa, the world's biggest gold producer, holds most of her reserves in gold.) In effect, when they receive sterling or other currencies from the non-sterling world, they transfer them to the United Kingdom and add to their balances. When they pay sterling and other currencies they withdraw them from the United Kingdom and run down their balances.

The United Kingdom thus acts as banker for the whole Area, carrying

sterling liabilities and holding reserves of gold and foreign currencies.

The system is a financial convenience for the countries concerned and works because the United Kingdom is always ready to change the sterling into gold or other foreign currencies, if required. *At the same time a considerable economy in the amount of gold and foreign currencies needed to finance a given level of trade is achieved, because the United Kingdom's reserves are able to act as the non-sterling reserves for all the area instead of each country having to maintain its own separate gold and foreign currency holding.* It is able to operate successfully because at any one time a particular country's non-sterling deficit may be offset by the surplus of another sterling country so leaving the stock of reserves unchanged.

WORLD "LIQUIDITY"

At the same time, sterling is held outside the Sterling Area. The holdings are widely distributed and for the most part are working balances. But recently quite large balances have been built up by European commercial banks and private persons in excess of their normal working requirements. The total sterling held by overseas countries amounts to well over £3,000 million, of which about two-thirds is held as part of the official reserves of individual countries, mainly those in the Sterling Area. Official reserve sterling accounts for about a tenth of the world's official gold and convertible currency reserves, and in a period when gold and dollars have been short this has been a very significant contribution to world liquidity. Without sterling the expansion of world trade and production would be seriously threatened. Further, as a trading currency sterling helps in the smooth flow of international payments and its use has become even wider since external convertibility was declared. Non-residents can use it to settle the transactions between themselves or to make payments to the Sterling Area just as freely as members of the Sterling Area.

Thus the whole trading and investing world benefits from the strength of sterling, through the contribution that it makes to the free flow of international trade and the more efficient use of reserves. The United Kingdom is fully conscious of its responsibility to maintain a stable currency in these circumstances, and the maintenance of the internal and external value of the £ sterling is a prime objective of Government economic policy.

Extracts from an address by the British Ambassador Sir Harold Caccia, in Seattle on Tuesday, September 15, 1959.

Under-Developed Countries and Population Trends

“...At the beginning of this century the population of the world was something in the order of one thousand five hundred million. By the end of this century it will almost certainly be more than six thousand million. At the present rate of increase, within a century and a half, that is by 2100, it may exceed thirty thousand million. Of course, in human affairs it is dangerous to rely on exact mathematical progression. But if the figures for 2100 should be suspect, the figures for 2000, which is only some 40 years way, are less so.

The significance of these figures in terms of politics is made sharp by two other factors. First, the industrial nations, primarily the Western nations, which comprise only 14% of the world's population, enjoy 55% of the world's income. Secondly, countries and continents are no longer divided by mountains and a waste of seas. Ignorance and distance are no longer protective barriers...

THE PROBLEM OF ECONOMIC GROWTH

How has this distinction between the ‘Have’ and ‘Have Not’ people of the world come to exist in its present sharp form? At the root of it lies not only the question of population increase which modern medicine and other things have made possible, but also the problem of economic growth. The first stage of economic growth depends upon a society being able and willing to invest at least 5 to 10% of its yearly gross national product in its future development. So long as the population of a country consumes the whole of its annual product, it cannot start on the road from a primitive traditional to a modern society.

Using a phrase from aviation, Professor Rostow of the Massachusetts Institute of Technology described the crucial point in such economic development as the moment when investment in the future has gone on for sufficiently long for the economy to “take off”. In these terms Britain and the United States both took off during the last century. What is even more pertinent in these terms, the Russian economy began to take off at some point towards the end of the last century...

...The appearance is that the Russian people in some 40 years have succeeded in becoming one of the most powerful countries of the world, and are on the way to becoming prosperous. These underdeveloped

countries may not all wish themselves to obtain a measure of that power. But it does not need any great stretch of the imagination to see how there might be some attraction for them in the Russian example of economic betterment, if no alternative is at hand.

It is for us to offer that alternative. We know well enough what is needed: monetary aid; technical aid; the possibility of trade. Let me say something under each of these three heads.

MONETARY AID

You in America have of course provided the largest sums. For instance, since 1953 the United States has made bilateral economic grants and loans to underdeveloped areas amounting to 4.2 billion dollars. This compares with promises of economic aid from all the Soviet bloc countries amounting to not much over 1.7 billion dollars. Indeed, if it comes to comparisons and the United States apart, we in the United Kingdom alone in the last seven years have given more economic assistance to other countries than the entire Soviet bloc.

Nevertheless, when these comparisons have been made, we must admit that the total aid provided has not yet achieved our purpose. Despite all our efforts, we should remind ourselves of some facts and figures. They came out at the Montreal Conference held a year ago. This was a gathering attended by the Finance Ministers of the Commonwealth, representing some six to seven hundred million people, or a quarter of the inhabitants of the world. Since 1950, and despite all the aid which they have received, the standard of living in many less-developed areas has been stationary. In the same period, the national income per head has risen more than 25% in Europe and about 13% in the United States. In other words, the gap has been widening.

Meanwhile, the Communists have succeeded in achieving psychological effects for their assistance program out of all proportion to its size. Why? The Communists have concentrated their economic assistance upon a limited number of countries in which they can achieve maximum political, strategic or psychological advantage. *Whereas Western aid has been spread throughout all the less-developed countries, numbering over seventy, four-fifths of the Russian offers have been to only five countries, that is Afghanistan, the United Arab Republic, India, Indonesia and Yugoslavia.* They have manoeuvred with great speed and flexibility and taken advantage of any turn in the local political trends. They have achieved a considerable degree of economic penetration in the Middle East in this way...

TECHNICAL AID

The provision of capital alone will not achieve our purpose. Its usefulness is among other things limited by the number of qualified technicians

COLOMBO PLAN—HELP TO 700 MILLION PEOPLE

Key figures given at the Annual Meeting of Ministers of the Colombo Plan Governments, Indonesia, November 1959, showed that since 1951:

- *Total assistance from governments outside the area (mainly Government to Government help) came to \$6.0 billion.*
- *Of which \$274 million was for technical assistance.*
- *18,000 men received special training abroad: over 10,000 technical experts and instructors were sent to the area.*
- *IBRD lending to the area—\$179 million.*
- *Population increase in the area: 10 million a year.*

and the administrative machine which can carry through development schemes. We and you have done a great deal already to try to provide the technicians who may be needed. But here again we face a stiff challenge. Imagine for instance that the Indians had asked you and us and we had agreed to help them to carry out an industrialization similar in scale and speed to the Chinese. In a recent article C.P. Snow has calculated that it would then require something like 10—20,000 engineers from the United States and United Kingdom to help get the thing going. At present we just could not find them.

Perhaps the Russians could. At any rate recent evidence suggests that the Russian educational system is turning out more of the technicians that are needed than either the United States or the United Kingdom, or both taken together. Once again, there is no question that we have already done a great deal. The problem is, *have we done enough* and are we putting ourselves in a position where we can help to the degree that will be needed?

TRADE

Thirdly, there is the question of trade. There are two broad aspects to this. Most underdeveloped countries are producers of primary products, that is, minerals such as copper, zinc, lead, or raw materials such as rubber and coffee. For them, trade is far more important than loans or grants. Many of them learnt that painfully through the recession of 1957/58. Then, mainly because of the fall in commodity prices, the *primary producing countries lost over two thousand million dollars, or about six times as much as they had been lent the year before by the World Bank*. How we can achieve some stability in prices of such primary commodities is of

course an immensely complicated subject in itself. But our capital aid will often miss its purpose if in the future we appear to take away with one hand more than we give with the other.

The other aspect of trade is our readiness to open our markets to manufactured as well as primary products. Here again, it is obvious that if under-developed countries are going to "take off", they must diversify their economies and industrialize. In any case, whether we like it or not, they intend to do so. When they achieve a degree of industrialization, they will want to sell the products in the international market in order to repay us our loans or in order to acquire capital for further development.

So far as the United Kingdom is concerned, we have tried to face these trade problems realistically. To start with we are the world's largest market for food, and one of the largest for raw materials. This means that we are one of the biggest importers of the primary commodities which the under-developed countries produce. In our Commonwealth we also help in another way. The produce and manufactured goods of the Commonwealth are given wide rights of unrestricted duty-free entry into the United Kingdom; some 95% of the imports into the United Kingdom from the Commonwealth pay no duty whatsoever. This applies to a vast range of manufactured goods as well as the basic agricultural products and minerals.

This is not done without sacrifice on our part. There is sometimes severe competition against sectors of British industry from the Commonwealth countries, for instance, cheap textiles. But the British Governments since the war have recognized that these difficulties, great as they are, and harsh as they may seem in some of their incidence, are not comparable with the injury we, and not we alone, should suffer from any other policy.

A TASK TO BE SHARED

I have dealt at this length with this question of the under-developed lands, because I would suggest to you that it is one of the most important single problems concerning our civilization today. Despite the difficulties, we have already done and are doing a great deal. But have we yet done enough to be certain that the uncommitted countries will remain uncommitted: I mean uncommitted to Communism?...

... This is not a problem which concerns Britain and the United States alone amongst the industrial powers. Nor do I wish to pretend that we have been or should be alone in tackling it. The task ahead can absorb all the united skills, statesmanship and resources of the free world if they can be mobilized. We have learnt through the years, sometimes most painfully, that world prosperity is indivisible. The world cannot endure and progress half in poverty and half in affluence.

U. S. IMPORTS FROM BRITAIN— EXPORTS TO BRITAIN

Value: \$000. Source: U. S. Bureau of the Census

U. S. Imports from Britain:

COMMODITIES	1950	1956	1957	1958
<i>TOTALS</i>	337,671	721,829	756,154	858,604
Meat & Dairy Products (including Fish)	1,322	1,524	1,795	1,492
Animal Products, Inedible	19,677	21,911	23,215	24,520
Grains, Fruits, Vegetables, etc.	8,098	17,486	14,233	14,528
Whisky	56,179	76,136	86,589	94,541
Plant, & Vegetable Products				
Inedible	4,549	5,588	6,303	6,212
Cotton, Semi & Manufactured	12,320	12,884	10,812	11,253
Wool, Raw, Semi & Manufactured	57,093	74,495	69,267	62,427
Other Textiles	43,014	30,918	25,149	19,722
Lumber & Paper	5,408	11,894	8,887	8,255
China, Earthenware & Glassware, etc.	13,031	20,227	18,165	18,756
Metals, Ores & Manufactures	45,691	96,041	93,754	89,106
Precious Stones, & Imitations	7,824	90,670	78,067	66,693
Machinery, Non-Electric	9,374	38,451	39,434	41,865
Machinery Electric & Allied	3,048	26,625	31,999	39,191
Automobiles & Parts	19,937	53,994	130,460	208,507
Aircraft, Engines & Parts	—	48,015	13,326	38,873
Chemicals	18,027	20,409	17,134	20,315
Miscellaneous	13,074	73,661	89,360	92,348

U. S. Exports to Britain:

COMMODITIES	1950	1956	1957	1958
<i>TOTALS</i>	504,446	891,406	1,089,743	821,080
Meat & Dairy Products (including Fish)	11,498	31,153	32,045	32,022
Animal Products, Inedible	6,979	11,805	13,726	11,484
Grains, Fruits, Vgs. etc. & Products	63,763	179,297	166,165	173,146
Tobacco	84,288	111,206	128,561	124,492
Cotton, Raw	100,936	79,314	144,265	64,196
Lumber & Paper	13,407	44,829	52,045	48,821
Fuels	30,700	90,618	147,341	29,995
Metals, Ores & Mfrs.	49,539	108,076	144,814	103,809
Machinery, Non-Electric	53,251	81,852	84,215	73,760
Machinery, Electric & Allied	5,757	11,269	11,395	12,829
Agricultural Machinery & Tractors	6,517	2,827	5,137	7,247
Automobiles & Parts	1,118	3,854	2,025	2,141
Aircraft & Parts	8,073	14,241	14,767	5,249
Chemicals, etc.	33,187	42,753	44,303	55,126
Miscellaneous	35,433	78,313	98,939	76,763

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